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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,134	01/31/2001	Takuro Tamura	07898-067001	7717
7590 12/15/2003			EXAMINER	
Stanley P. Fisher REED SMITH LLP 3110 Fairview Park Drive Suite 1400 Falls Church, VA 22042			FORMAN, BETTY J	
			ART UNIT	PAPER NUMBER
			1634	

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/762,134	TAMURA ET AL.	
	Examiner	Art Unit	
	BJ Forman	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-7 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2/02 4/03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group II, Claims 4-7 in papers filed 6 October 2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Applicant's amendment to Claim 7 is acknowledged. The amendment has been entered.

Claims 4-7 are currently pending.

Specification

2. The Abstract is objected to because it contains two paragraphs.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally **limited to a single paragraph** on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Appropriate correction is required.

Claim Objections

3. Claim 7 is objected to because of the following informalities:
- a. In lines 3 & 5, “a element” should be replaced with “an element”
 - b. In line 4, “on chip” should be replaced with “on-chip” as recited in lines 9, 13 & 15.
- Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is indefinite because the claim is drawn to the method of Claim 4 comprising six method steps including constructing a database, recording information and linking information. However, it is unclear how the method steps recited in Claim 7 relate to/or function with the method step recited in Claim 4 (i.e. using the spots). Therefore, it is unclear whether the method of Claim 7 is a further limitation of Claim 4.

Claim 7 is further indefinite for the recitations “the microarray index” (line 8), “the index spots” (line 13) and “the element index” (line 16) because the recitations lack proper antecedent basis in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Noblett (U.S. Patent No. 6,362,004, filed 9 November 1999).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

The claims are broadly drawn to methods for indexing a microarray. The method steps including “use” of spots for maintaining index information. The claims do not define or describe how the spots are used; what type of index information is being claimed; and/or how or where the information is maintained. Claim 7 is drawn to a method comprising steps of creating a database and recording information. The steps of claim 7 appear to read on a creating a spreadsheet. While limitations from the specification are not read into the claims, the claims are given their broadest reasonable interpretation in view of the art as described below.

Regarding Claim 4, Noblett discloses a method for indexing a microarray chip comprising a plurality of spots arranged in a predetermined positional relationship, the method comprising the step of using some of the plurality of spots for maintaining the index

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information (i.e. Noblett uses fiducial spots for maintaining position information, Column 5, lines 20-48; Column 6, lines 41-Column 7, line 20).

Regarding Claim 5, Noblett discloses a method for indexing a microarray chip comprising a plurality of spots arranged in a predetermined positional relationship, the method comprising the step of using some of the plurality of spots for maintaining the index information (i.e. Noblett uses fiducial spots for maintaining position information, Column 5, lines 20-48; Column 6, lines 41-Column 7, line 20) wherein the index information is reproduced by detecting the presence of a detective colorant on the index spots (Column 4, lines 8-22 and 35-49).

Regarding Claim 6, Noblett discloses the method of Claim 5 wherein information detected is realigned into a two-dimensional matrix upon reproducing the information (Column 7, lines 21-Column 8, line 4) and part of the information is used as parity information i.e. to equally focus the probe spots (Column 7, lines 31-43).

8. Claims 4- 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Balaban et al (U.S. Patent No. 6,188,783, filed 24 July 1998).

Regarding Claim 4, Balaban et al disclose a method for indexing a microarray chip comprising a plurality of spots arranged in a predetermined positional relationship, the method comprising the step of using some of the plurality of spots for maintaining the index information (i.e. interrelating probes on a chip providing a relational database, Column 2, lines 28-49).

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Regarding Claim 5, Balaban et al disclose a method for indexing a microarray chip comprising a plurality of spots arranged in a predetermined positional relationship, the method comprising the step of using some of the plurality of spots for maintaining the index information (i.e. interrelating probes on a chip providing a relational database, Column 2, lines 28-49) wherein the index information is reproduced by detecting the presence of a detective colorant on the index spots i.e. labeled probes (Column 4, lines 19-51).

Regarding Claim 6, Balaban et al disclose the method of Claim 5 wherein information detected is realigned into a two-dimensional matrix upon reproducing the information (i.e. scanned) and part of the information is used as parity information (i.e. intensity as a function of position, Column 4, lines 19-51).

Regarding Claim 7, Balaban et al disclose the method of Claim 4 comprising constructing a database for storing an element information record (e.g. sequence items), a microarray chip master record (chip design and/or genomic items) and an on-chip-element information record (e.g. chip design objectives and/or tiling) (Column 3, lines 30-51 and Column 6, lines 7-28), recording information of an element on the information record, recording information of the microarray chip, recording information on the on-chip information regarding location, element index and spot measurement (Column 4, lines 41-64) linking the microarray chip with the microarray chip record and linking the on-chip element with the element information e.g. relating the sequences to the genomic design and tiling (Column 7, lines 30-67 and Column 9, lines 31-65)

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9. Claims 4- 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Shams (U.S. Patent No. 6,349,144, filed 7 February 1998).

Regarding Claim 4, Shams discloses a method for indexing a microarray chip comprising a plurality of spots arranged in a predetermined positional relationship, the method comprising the step of using some of the plurality of spots for maintaining the index information (Abstract).

Regarding Claim 5, Shams discloses a method for indexing a microarray chip comprising a plurality of spots arranged in a predetermined positional relationship, the method comprising the step of using some of the plurality of spots for maintaining the index information wherein the index information is reproduced by detecting the presence of a detective colorant on the index spots i.e. labeled probes (Column 11, lines 16-40).

Regarding Claim 6, Shams discloses the method of Claim 5 wherein information detected is realigned into a two-dimensional matrix upon reproducing the information (Column 10, lines 44-65 and Fig. 8) and part of the information is used as parity information (i.e. extract background, Column 11, line 16-Column 12, line 3).

Regarding Claim 7, Shams discloses the method of Claim 4 comprising constructing a database for storing an element information record (e.g. set of DNA spot images), a microarray chip master record (image frame) and an on-chip-element information record (e.g. grid including position information) (Column 5, lines 48-62), recording information of an element on the information record, recording information of the microarray chip, recording information on the on-chip information regarding location, element index and spot measurement (Column 5, lines 48-62 and Fig. 3) linking the microarray chip with the microarray chip record and linking the on-chip element with the element information e.g. relating the sequences to the genomic design and tiling (Column 12, line 58-Column 13, line 34).

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Prior Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. Wolber (U.S. Patent No. 6,284,465) teaches a method for indexing a microarray (Abstract).

b. Maslyn et al (U.S. Patent No. 6,408,308) teaches a method for indexing a microarray (Abstract and Claims 1-7).

Conclusion

11. No claim is allowed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878 until 13 January 2004. Starting 14 January 2004, the examiner's phone number will be (517) 272-0741. The examiner can normally be reached on 6:00 TO 3:30 Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (703) 308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.



BJ Forman, Ph.D.
Primary Examiner
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December 10, 2003